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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/677,462	10/02/2003	Sung-Koog Oh	5000-1-365	8492

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EXAMINER	
DEHGHAN, QUEENIE S	

ART UNIT	PAPER NUMBER
1731	

MAIL DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

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Office Action Summary	**Application No.** 10/677,462	**Applicant(s)** OH ET AL.	
	Examiner Queenie Dehghan	**Art Unit** 1731	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 26 February 2007.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-5 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-5 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claim 1 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The newly amended claim 1 indicates that the result of the first spin step is the minimization of PMD depending on distance and that the result of the second spin step is the minimization of PMD depending on wavelength. The specification does not appear to disclose this explicitly. Instead the specification indicates that minimization of PMD based on distance and wavelength does occur, but not specifically based on each individual spin forming steps.

Claim Rejections - 35 USC § 103

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Evans et al. (5,822,487) in view of Orita (US 2002/0134114), and Hart, Jr. et al.

(5,418,881). Evans et al. disclose a method for drawing an optical-fiber perform comprising a step of heating one end of the optical-fiber perform for melting and drawing the end of the optical-fiber perform (col. 4 lines 23-26, Fig. 5) and first and second spin-forming steps for applying a spin to the optical fiber in a predetermined direction by passing through a series of roller, *at least one of which is rotated* (col. 4 lines 29-33, col. 5 lines 9-11, Fig. 5). Although Evans et al. '487 suggest using more than one roller for twisting, it is not explicit. Orita teach a first spin-forming step and a second spin-forming step for providing a first and second twist to an optical fiber by utilizing a first and second wheel that oscillates in opposite directions ([0018], [0019], [0020], [0023], [0036], figures 1 & 7). Basically Orita teaches the utilization of the two oscillating wheels to impose a spin on optical fiber; in this case, two spins, since there are two wheels acting on the fiber in sequence. Although the wheels of Orita are oscillating and not tilted or swinging, Hart, Jr. et al. teach many well known ways for imparting spin on fiber, including tilting a wheel at a predetermined angle θ to impose a twist on the fiber in one direction and also a different twisting step comprising oscillating a wheel through the angle 2θ with respect to the drawing axis to impose a second twist in the counterclockwise and clockwise directions (col. 4 lines 26-57, 60-61, 66-68, col. 5 lines 1-9, figures 3 &4). Evans et al. also suggest twisting in one direction (as can be done with the tilting of one wheel) will reduce the time delay differences between the two polarization modes, but twisting in both directions will compensate for the time differences (col. 3, lines 21-25). It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teachings of Hart, Jr. et al. of employing well known different ways of imposing a spin on fiber (i.e. tilting of the wheel, swinging of the wheel) with the two twisting wheels and the spin-forming steps of Orita in the suggested fiber twisting device of Evans et al. in order reduce polarization mode dispersion in the optical fiber, as taught by Hart, Jr. et al. Furthermore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to expect that the act of the first and second spin forming steps would inherently result in the minimization of PMD depending on distance and wavelength in the fiber.

3. Regarding claim 2, Evans further discloses the fiber as having asymmetrical twist throughout its length, implying that the fiber is twisted with different number of turns in the first and second spin-forming steps (col. 4, lines 55-58).

4. Regarding claims 3-5, Evans mentions a spin function as a linear superposition (summation) of constant and sinusoidal functions (col. 5 lines 21-23), such as $S(z) = \alpha_0 Sin(2\pi f_0) + n\alpha$, where $n\alpha$ is the constant or integer that can define the first spin-forming step and $\alpha_0 Sin(2\pi f_0)$ is the sinusoidal function that can define the second spin-forming step.

Response to Arguments

5. Applicant's arguments filed February 26, 2007 have been fully considered but they are not persuasive. The applicant points out that the first and second spin forming step are sequentially applied. This does not appear to be the case, instead the claim merely recites that two spin forming steps are performed. Furthermore, one of ordinary

skill in the art would expect that in performing the first and second spin forming steps as recited in the rejection above, that the result of minimizing PMD depending distance and wavelength would have inherently occurred.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Queenie Dehghan whose telephone number is (571)272-8209. The examiner can normally be reached on Monday through Friday 8:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Q Dehghan

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